DOCUMENT RESUME

ED 026 719 EA 001 942

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Change in Flexibility and Supervisory Attitudes of Educational Administrators.

Pub Date 10 Jun 67

Note-39p.; Paper presented to Canadian Council for Research in Education (University of Manitoba, Winnipeg, June 10, 1967).

EDRS Price MF-$0.25 HC-$2.05

Descriptors-*Administrator Attitudes, Attitude Tests, *Educational Administration, *Evaluation, *Laboratory Training, Leadership Styles, *Management Education, Organizational Change, Statistical Analysis

Managerial effectiveness of educational administrators is eroded if they are unable to respond to organizational problems with flexibility. Little has been done to evaluate the effectiveness of workshop experiences in increasing managerial flexibility and awareness of human relations as an important parameter of production. Flexibility can be measured by use of a Philosophic-Mindedness (PM) Flexibility Scale which tests individuals' comprehensiveness, penetration, and flexibility of thought. A Managerial Values Instrument is used to determine administrators' relative concerns for human values or production. Ninety-eight members of the Oregon Compact were given a forced-choice questionnaire integrating these measuring devices, before and after they attended a 2-week human relations laboratory. Forty-nine nonattending members of the Compact participated in the testing and composed the control group. Statistical analysis of the results shows that laboratory participation (1) increased concern for people as indicated by greater cognitive openness, behavioral skill, and understanding of social processes, and (2) increased flexibility as measured by the PM Flexibility Scale. Questions concerning retention of training, relationships between workshop length and impact on participants, and what experiences have the most impact were not answered. (TT)

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CHANGE IN FLEXIBILITY AND SUPERVISORY ATTITUDES OF EDUCATIONAL ADMINISTRATORS

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June 10, 1967

Introduction

The question of system renewal is raised by John Gardner in a way which suggests the problem area out of which this study grew:

> Suppose one tried to imagine a society that would be relatively immune to decay--an ever-renewing society. What would it be like: What would be the ingredients that provide the immunity? What can be done about the factors that impede a society's self-renewal?[1]

A self-renewing social system is defined by Gardner as one that possesses the capacity to recognize, protect, and encourage creative and innovative individuals--those who possess the traits of openness, independence, flexibility, and the ability to find order in experience.[2]

A major obstacle to system renewal, according to many theorists, is the sometimes dysfunctional stress upon the rational task aspects of organizational life to the exclusion of the basic human factors which

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[1] John W. Gardner, Self-Renewal: The Individual and the Innovative Society (New York: Harper, 1964), p. 1.

[2] Ibid., pp. 32-40.

EA 001 942

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relate to the task. The ignoring of these human factors tends to reduce task competence.[3] Administrators socialized within bureaucratic normative structures often appear to be badly cast to play the intricate human roles now required of them. Bennis argues that their "ineptitude and anxieties lead to system of discord and defense which interfere with the problem-solving and innovative capacities of organizations."[4]

A perusal of recent criticism of American education would give little comfort to those who hold that educational organizations have escaped the problems shared by other organizations. For example, Harvey notes:

> One would think that educational institutions would be systems in which such an orientation [one which fosters adaptability] would most likely prevail. Yet we know that

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[3]Support for this basic thrust can be drawn from the landmark work of Douglas McGregor, The Human Side of Enterprise (New York: McGraw-Hill Book Co., 1960), and from the following recent works: Chris Argyris, Organization and Innovation (Homewood, Ill.: Irwin-Dorsey Series in Behavioral Science, 1965); Argyris, "Interpersonal Barriers to Decision Making," Harvard Business Review, April, 1966, pp. 84-97; Argyris, Personality and Organization (New York: Harper and Row, 1957); Argyris, Integrating the Individual and the Organization (New York: John Wiley and Sons, Inc., 1964); Warren G. Bennis, "Theory and Method in Applying Behavioral Science to Planned Organizational Change," The Journal of Applied Behavioral Science, Vol. 1, No. 4, October-November-December, 1965, pp. 337-360; Nathaniel Cantor, The Learning Process for Managers (New York: Harper and Row, 1958); James V. Clark, "A Healthy Organization," California Management Review, 1962, pp. 16-30; William J.J. Gordon, Synectics: The Development of Creative Capacity (New York: Harper and Row, 1961); Harold J. Leavitt, Managerial Psychology (Chicago: Phoenix Books, University of Chicago Press, 1958); Norman R.F. Maier and John J. Hayes, Creative Management (New York: John Wiley and Sons, 1962); Abraham H. Maslow, Eupsychian Management (Homewood: Irwin-Dorsey Series in Behavioral Science, 1965); Gary A. Steiner, The Creative Organization (Chicago: University of Chicago Press, 1965.

[4]Warren G. Bennis, Changing Organizations (New York: McGraw-Hill Book Co., 1966), p. 116.

> this is rarely the case, that education is often an inculcation of existing means without concern of ends, a kind of indoctrination of terms, platitudes and overt behaviors which lead toward an overcommitment to the present with little regard of what tomorrow might be.[5]

It would follow, then, that social practitioners, including educational administrators, need to be adaptable themselves, and need to be able to diagnose organizational blockages accurately and respond flexibly. These twin abilities have been suggested as major criteria of managerial effectiveness.[6] What appears to be needed is greater accuracy in the kinds of assumptions about people employed by the administrator--better empirical "fit." Schein puts it as follows:

> Probably the most important thing the organization can do in this regard is to develop assumptions about people which fit reality. This, in turn, implies some willingness to find out what each man is like and what he truly wants. By making broad generalizations about people, the organization not only runs the risk of being wrong about the empirical realities, but, perhaps worse, it insults the employees by assuming they are all basically alike. If managerial assumptions begin to be exposed and tested, not only will this change provide a basis for learning what the facts are, but also the willingness to test assumptions will communicate a degree of concern for people which will reduce their feeling of being threatened or demeaned. As assumptions become increasingly realistic, management practices will begin to build the kind of climate which is needed for reliable and valid communication, creative effort, flexibility, and commitment.[7]

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[5]O.J. Harvey, "Ends, Means and Adaptability, " in O.J. Harvey (ed.), Experience, Structure and Adaptability (New York: Springer Publishing Co., Inc., 1966), p. 10.

[6]Edgar H. Schein, Organizational Psychology (Englewood Cliffs: Prentice-Hall, Inc., 1965), pp. 60-61.

[7]Ibid., p. 104.

What kinds of interventions produce flexible managers and organizations whose assumptions fit reality? Practitioners of one technology, human relations laboratory education, sometimes make claims to such accomplishments. Human relations laboratory education seeks to increase the ability of individuals to gain more accurate perceptions of behavior and to play more adequately the intricate human roles now demanded by organizational and community life.[8] The expansion of this technology into industrial, governmental, community, military, educational, and professional settings all over the country has been rapid and is still accelerating. However, attempts at evaluation have not increased at the same rate. As one researcher interested in this area has noted:

> Research on any form of treatment is classically difficult, unrewarding, and infrequent. When the product of a process is change in persons, the criterion problem is ordinarily a major one, whether the treatment occupies the domain of education, mental health, or social functioning. Goals are vaguely stated (partly because of ignorance and partly, it has been suggested, to protect the practitioner against charges of malpractice). Often, it is claimed that 'real' change may not be assessable until long after the treatment has occurred. Even if goals are precisely and operationally defined, treatment programs themselves are usually hard to describe accurately enough for later replication. Furthermore, test-treatment interaction is quite likely; subjects are easily sensitized by pre-measures. Even more crudely, it is frequently difficult to locate anything like a meaningful control group, let alone establish its equivalence. Finally, numbers are usually small, and the treatment population is often biased through self-selection.
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> Thus, it is not surprising that perhaps 95 percent of all treatment efforts go unstudied, and that even the 5 per cent typically show serious defects in design, measurement, or data analysis stemming from insufficient attention to the problems alluded to above. And, methodological problems aside, most

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[8] Leland P. Bradford, Jack R. Gibb and Kenneth D. Benne, T-Group Theory and Laboratory Method (New York: John Wiley and Sons, 1964), pp. vii-x.

> treatment studies have a central substantive weakness: being relatively atheoretical, they lead to no coherent additions to either science or practice. The variables presumed to explain the amounts of change in subjects are rarely specified, and change processes during treatment are hardly ever studied.[9]

The Problem:

While a considerable amount of literature exists on laboratory education[10] this paper focuses on a pilot attempt to add to our empirical knowledge about this phenomenon. Several questions can be posed. First, what is the purpose of laboratory education? Second, what is known from previous research on laboratory training? Third, what changes should be expected from laboratory training? Fourth, how does this study contribute to laboratory training and to educational administration. The remainder of this paper will deal with these questions.

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[9]Matthew B. Miles, "Changes During and Following Laboratory Training: A Clinical Experimental Study," Journal of Applied Behavioral Science, Vol. 1, No. 3, July-August-September, 1965, pp. 215-216.

[10]Among the sources of theoretical and research literature on laboratory education, the following are major: Edgar H. Schein and Warren G. Bennis, Personal and Organizational Change through Group Methods: The Laboratory Approach (New York): John Wiley and Sons, 1965); Bradford, Gibb and Benne, op cit.; The Journal of Applied Behavioral Science; Human Relations Training News; Herbert A. Shepard, "Changing Interpersonal and Intergroup Relationships in Organizations," in James G. March (ed.), Handbook of Organizations (New York: Rand McNally and Co., 1965), Harold J. Leavitt, "Applied Organizational Change in Industry: Structural, Technological and Humanistic Approaches," also in March, Ibid.

LABORATORY TRAINING

The Client Focus of Laboratory Training

It is possible to classify outcomes sought in human relations training in many ways. One useful rubric involves a consideration of the ultimate client for laboratory training. Is it the individual participant or some larger unit like an organization or a subunit of a social system? To put this another way: is participant self-knowledge or organizational change the main focus of a particular lab? In general, practitioners of laboratory training seek to produce both participant self-knowledge and organizational change although there are individual differences in the relative emphasis upon each goal.[11]

In recent years an important perspective growing from a humanistic, existential, developmental thrust focusing on adaptation has been that organizations, like persons, can be viewed as organisms whose parts are living and interrelated by communication networks.[12]

Organizations can thus be understood as learning and adapting, as being and becoming; organizational change can be viewed in terms of development and regression, of health and illness, of adaptive and maladaptive processes. One theoretical treatment, building on the theme of "corporate Darwinism," traces the evolution of firms through several stages, culminating in the "dynamic" stage of mutual interdependency.[13]

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[11] Schein and Bennis, op. cit., p. 37.
[12] Shepard, op, cit., p. 1116.
[13] Robert R. Blake, Warren E. Avis, and Jane S. Mouton, Corporate Darwinism (Houston: Gulf Publishing Co., 1966).

McGregor's "Theory X" and "Theory Y" represent two developmental phases in ways of viewing the individual, society, and organization as well as in managerial philosophy and practice.[14]

The Primary and Secondary mentalities of Shepard[15] represent another effort at construing fundamentally different world views which have vastly different implications for managerial philosophy and practice. His treatment emphasized the divergent implications to be derived from viewing the basic societal unit as the individual or viewing it as the small group.

The above writers seem inclined to emphasize the organization as a client. Other practitioners, such as Clark[16] and Tannenbaum, Weschler and Massarik[17] appear to give more emphasis to the individual as the client of laboratory training, although the organization is not ignored. For example, laboratory training is conducted for graduate business administration students by these writers even though the students may or may not be working in an organization. While it remains useful to think in terms of client focus in examining literature on human relations training, few practitioners of the technology would be likely to take issue with the following:

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[14]McGregor, op. cit.
[15]Shepard, op. cit.
[16]James V. Clark, Education for the Use of Behavioral Science, (Los Angeles: Institute of Industrial Relations, University of California, 1962).
[17]R. Tannenbaum, I.R. Weschler, and F. Massarik, Leadership and Organization: A Behavioral Science Approach (New York: McGraw-Hill, 1961).

> Mature individuals, rational and realistic, can make some contribution to social sanity; and as social patterns improve, we can look to the growth of freer and more creative personalities. Which end of the stick you pick up--the individual or social institutions--does not much matter, if only you take hold, and lay it on. It may be that we do not have enough time or enough strength to ward off the madness that threatens. But we would be mad to quit before we have really begun.[18]

Changes as a Result of Laboratory Training

Four basic patterns of evaluation research on laboratory training can be distinguished:

1. Integrated research-training design
2. Before-after measures of delegates
3. Measures of delegates only after the lab
4. Informal observation, questionnaire administration, and interviews during and after the lab.[19]

Methods 1 and 2 are probably the most adequate ways of measuring change. The present study follows Method 2. Other before-after studies include Argyris'[20] examination of a top management team's decision-making processes for several months prior to a laboratory experience, and then viewing the same group's decision making for some weeks after. Substantial changes in the direction of greater effectiveness were reported.

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[18]Abraham Kaplan, The New World of Philosophy (New York: McGraw-Hill 1961).

[19]Schein and Bennis, op. cit., p. 238.

[20]Chris Argyris, Interpersonal Competence and Organizational Effectiveness (Homewood: Dorsey Press, 1962).

Blake and Mouton[21] report a before-after study to evaluate the effects of an "idea laboratory" in increasing the flow and utilization of ideas in an organization. By means of interviews, questionnaires, and rating scales, they obtained positive changes in tendencies to appraise one's own performance, changes in managerial performance (defined as better listening, greater readiness to face conflict, re-education of inter-personal frictions and blockages, and increased rejection of compromise as the basis for decision-making), improved relations between regions and division and between superiors and subordinates. They also obtained indications of increased awareness of and control over outworn traditions, precedents, and past practices, a better comprehension of where the problems of management are, and a greater variety of alternatives for developing solutions to these problems. These changes were observed in addition to the primary ones of increase in the production and utilization of ideas.

Schutz and Allen[22] studied seventy-one participants in the 1959 Western Training Laboratory in Human Relations. Both FIRO-B questionnaires (administered before, after, and six months later) and open-ended questions administered after six months supported the hypothesis that

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[21]Robert R. Blake and Jane S. Mouton, "Improving Organizational Problem Solving through Increasing the Flow and Utilization of New Ideas," Training Director's Journal, Vol. 17, No. 9, September, 1963, pp. 48-57.

[22]William C. Schutz and Vernon L. Allen, "The Effects of a T-Group Laboratory on Interpersonal Behavior," Journal of Applied Behavioral Science, Vol. 2, No. 3, July-August-September, 1966, pp. 265-286.

the training laboratory changes people selectively, depending on their initial personality, the overly dominant becoming less dominant, the overly affectionate more discriminating, etc. The hypothesis was also supported that change after a period of six months is in a positive direction with respect to the participant's self-concepts and behavior and feelings toward others.

Another before-after design is shown by Burke and Bennis' study of changes of delegate self-images during the course of the laboratory.[23] Instruments to elicit self-descriptions and descriptions of others were administered early and late in the laboratory experience. Significant changes in perceptions of self and of other group members were demonstrated.

In none of the studies reviewed above was base line data gathered. That is, although changes occurred from before to after the laboratory it is not always possible to establish that the changes occured as a result of the laboratory since no comparable group took the instruments but received no "treatment." However, in a study by Miles[24] of thirty-four elementary school principals attending a two-week training laboratory, two carefully selected control groups were employed. Changes as a result of the training were associated with active, "unfrozen" participation at the laboratory, with reception of feedback and amount of involvement.

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[23]R.L. Burke and W.G. Bennis, "Changes in Perception of Self and others during Human Relations Training," Human Relations, Vol. 14, No. 2, May, 1961, pp. 165-182.

[24]Mathew B. Miles, "Changes during and following Laboratory Training: A Clinical Experimental Study," Journal of Applied Behavioral Science, Vol. 1, No. 3, July-August-September, 1965, pp. 215-242.

Using the same subjects as the Miles study above, Bunker[25] presents data on preceived behavior changes one year after participation in training. Participants are seen by co-workers as increasing significantly in cognitive openness, behavioral skill, and understanding of social processes. Long-range changes were correlated with learning measures at time of training.

Blake and Mouton[26] conducted and evaluated two one-week laboratories for thirty-three managers and twenty-three union members from the same plant. A forced-choice questionnaire, administered before the training and upon its completion was used. The instrument and its related rationale were used during the laboratory to provide "feedback" to the participants about their supervisory attitudes. Thus, significant changes in attitudes of both groups occurred as a result of the training.

These studies indicate some of the directions of previous human relations training evaluations. The specific outgrowth of laboratory training reflected in literature on the "Managerial Grid" and introduced by the last study cited above, has direct bearing on the present study. The same instrument was employed to assess beliefs about supervisory practices and the rationale for the present study draws significantly on thinking about the Managerial Grid.

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[25]Douglas R. Bunker, "Individual Applications of Laboratory Training," Journal of Applied Behavioral Science, Vol. 1 No. 2, April-May-June, 1965, pp. 131-148.

[26]Robert R. Blake and Jane S. Mouton, "Some Effects of Managerial Grid Seminar Training on Union and Management Attitudes toward Supervision," Journal of Applied Behavioral Science, Vol. 2, No. 4, October-November-December, 1966, pp. 387-400.

The Managerial Grid

Blake and Mouton adapted many of the seemingly disparate theories and practices of supervision and management into a "Managerial Grid" which seeks to provide both a model for understanding managerial behavior and a vehicle for communicating otherwise nebulous concepts to managers in the field.[27] The grid is shown in Figure 1.[28] The Managerial Grid provides a means of representing predominant managerial styles in terms of "concern for people" and "concern for production." The following summary of the five "styles" is drawn from The Managerial Grid.[29]

The 9, 1 Managerial Style is characterized by high concern for production coupled with a low concern for people. The supervisor feels his responsibilities are to plan, direct, and control the actions of the subordinates in whatever way necessary to reach the production objectives of the enterprise; the supervisor plans, subordinates execute.

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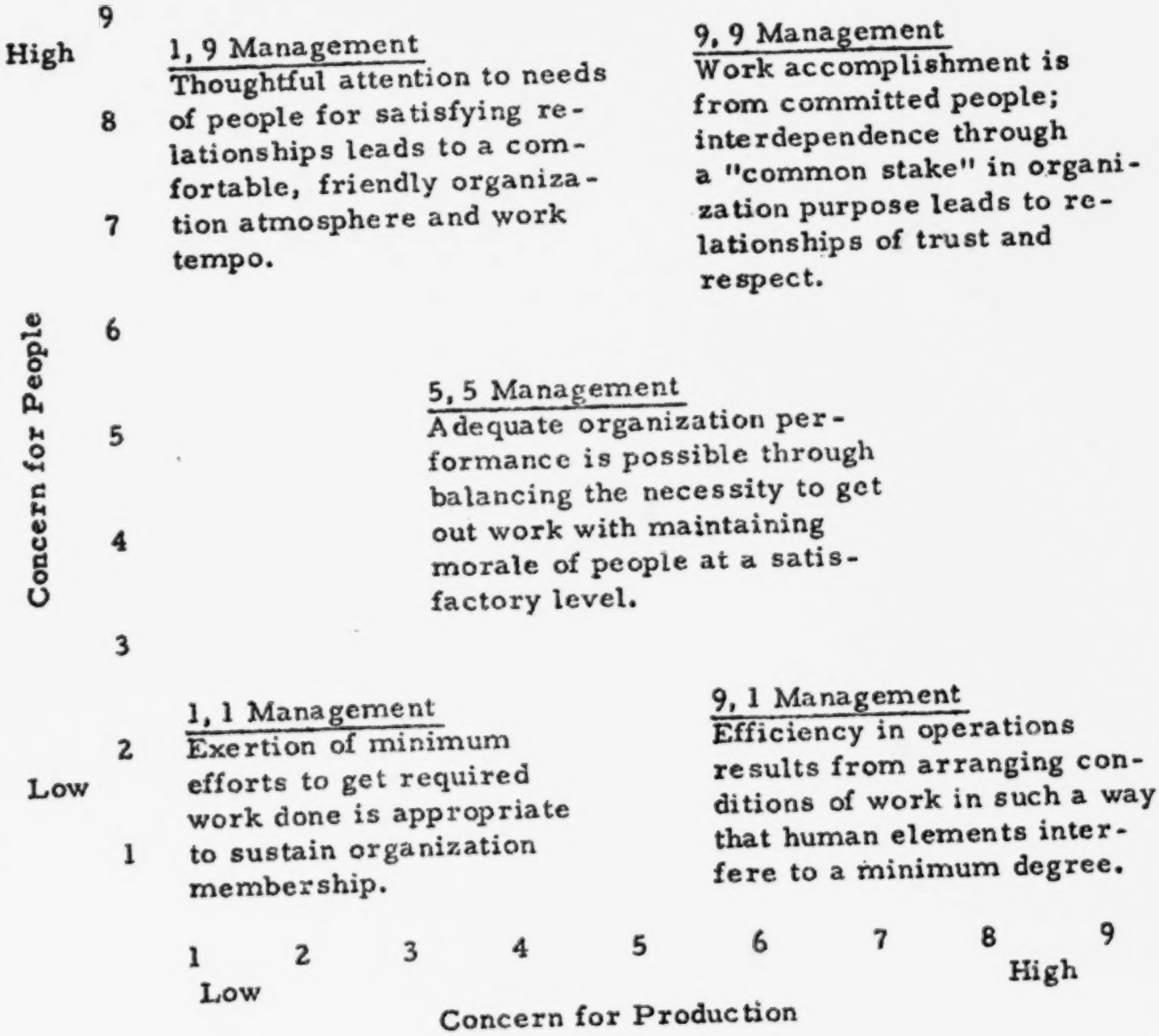
[27] See especially Robert R. Blake and Jane S. Mouton, The Managerial Grid (Houston: Gulf Publishing Co., 1964). Also, Robert Blake and Jane S. Mouton, Group Dynamics--Key to Decision-Making (Houston: Gulf Publishing Co., 1961); Robert S. Blake, Herbert A. Shepard and Jane S. Mouton, Managing Intergroup Conflict in Industry (Houston: Gulf Publishing Co., 1964); Robert S. Blake, Jane S. Mouton and Alvin C. Bidwell, "Managerial Grid," Advanced Management-Office Executive, September, 1962, pp. 12-29; Bernard Portis, "Management Training for Organization Development," The Business Quarterly, Summer, 1965, Vol. 30, No. 2, pp. 44-54; Robert R. Blake and Jane S. Mouton, Richard L. Sloma, "The Union-Management Intergroup Laboratory: Strategy for Resolving Intergroup Conflict," Journal of Applied Behavioral Science, Vol. 1, No. 1, January-February-March, 1965, pp. 26-57.

[28] Blake and Mouton, The Managerial Grid, op. cit., p. 10.

[29] Ibid.

FIGURE 1

THE MANAGERIAL GRID


9
High
1, 9 Management
Thoughtful attention to needs of people for satisfying relationships leads to a comfortable, friendly organization atmosphere and work tempo.
9, 9 Management
Work accomplishment is from committed people; interdependence through a "common stake" in organization purpose leads to relationships of trust and respect.
8
7
6
5, 5 Management
Adequate organization performance is possible through balancing the necessity to get out work with maintaining morale of people at a satisfactory level.
5
4
Concern for People
3
1, 1 Management
Exertion of minimum efforts to get required work done is appropriate to sustain organization membership.
9, 1 Management
Efficiency in operations results from arranging conditions of work in such a way that human elements interfere to a minimum degree.
2
Low
1
1 2 3 4 5 6 7 8 9
Low
High
Concern for Production

One thought monopolizes the supervisor's concern and action--PRODUCTION. When conflict arises, the supervisor seeks resolution by arranging conditions of work which minimize feelings; he prevents the "human elements" from interfering with efficiency and output. Uniform policies are seen as indispensable to orderly production, quota and deadlines are held in high esteem; however, subordinates take no part in setting them. Since supervision is a one to one relationship (supervisors make decisions; subordinates carry them out), communication is exercised by reducing the information to writing. The use of hierarchial power, in the authority-obedience sense, is the basis of control.

The 1, 9 Managerial Style can be apprehended in light of its high concern for people and low concern for production. Attitudes and feelings of people are viewed as important; therefore, conditions are arranged so that personal, social and welfare needs can be met. The key to this style is "togetherness." In order to have a work unit of one big happy family, the 1, 9 supervisor is involved in "making peace" with people at all levels in order to win support. The aim is to encourage people to set general goals which everyone can support. The supervisor feels that subordinates are important as people and that his job is to provide for them and keep their spirits up. This goal is sought through extended coffee breaks, social dinners, parties and picnics.

Often, the 1, 1 Managerial Style reflects those assumptions laced by defeat. This style is characterized by low concern for productivity and low concern for people. Since concern for both is low, the

supervisor experiences little or no conflict between production and people. Little is expected and little is given. The supervisor may take the role of being simply a messenger of directions. He puts people on the job and leaves them alone. When mistakes occur, he ignores them and takes the attitude of "who cares?" However, when a demand for responsibility is considered, he may blame subordinates and seek to relieve himself of responsibility. The 1, 1 supervisor lets people create their own conditions of morale; communication is maintained at a low level and conflict is usually avoided by physical flight.

The 5, 5 Managerial Style embraces intermediate concern for production linked with moderate concern for people. Workable solutions are found through equilibrium or compromise processes. The guiding assumption is for the supervisors to seek the position that is "in between" production and people. Reversals between the extremes can occur. Three words dominate the 5, 5 style--lead, motivate and communicate. The supervisor has high regard for informal system and pays strict attention to communication. In order to solve problems and conflict, the supervisor keeps participants apart from one another until a solution can be found. The 5, 5 supervisors reflect the very predominant "political" type of assumptions about administration.

The 9, 9 Managerial Style stresses high concern for production coupled with a high concern for people. Unlike the other basic assumptions, it is assumed that there is no necessary and inherent conflict between production requirements and the needs of people; they are viewed as complementary. The basic aim is to promote conditions which integrate

creativity, high productivity and high morale through team action. Direction and control are achieved by working for an understanding of, and agreement by, subordinates concerning organization purpose and how to contribute to it. The supervisor works with the others to establish direction, then the job is directed by those doing it. The key to control is seen as commitment. A strong recognition of interrelatedness exists. The 9, 9 style encourages the viewing of mistakes as educational opportunities. Mistakes occur because of misunderstandings, not because of the deliberate intents. Mutual understanding is seen as the key to agreement and control. The goal of communication is open, authentic and candid discussions.

With this brief summary of the five styles, it can be noted that the grid format provides a framework for considering the relative merits and dysfunctional elements of the several "styles" represented. The Managerial Grid format points toward the development of a managerial style (9/9) which draws maximally upon behavioral science concepts.[30] An objective of the Managerial Grid Seminars is, through the use of the Managerial Values Scale for feedback in a laboratory setting, to assist managers to solve problems of achieving production through more effective use of people. This means moving participants toward those supervisory attitudes characterized on the Grid as 9/9.

Human Relations laboratory training in general as well as the special adaptation of it called Managerial Grid Seminars seeks to aid participants in gaining a more usable understanding of behavioral science

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[30] Ibid., p. 178.

concepts concerning sound production-people relationships. Of special relevance is that this study, without discussions of the instrument or the rationale behind the managerial values instrument with the participants, sought to measure change in beliefs about effective supervision by the use of this instrument.

Construal Variables and Flexibility

A perceptive remark by John Fischer can serve to state the theme of this section: "One need not support a cult of personality to recognize that institutions are in fact to a considerable degree the lengthened shadows of men."[31]

The relationship between the construct systems of leaders of organizations and the shape or structure of the organization itself is treated in terms of educational administration by Bills:

> ...we have come close to equating the scientific study of school administration with the study of objectively verifiable behavior. We have come more or less to an agreement that what really counts is what a person does. . . . Perhaps an additional frame of reference would be helpful in this study of school administration. . . I am suggesting that when a person behaves, he does so in terms of the world as he views it at the instant of action. This world is never the same for two people, and it is never the same for one person from one time to another; but it is to his immediate perception of his world that a person responds. . .
>
> ...we may progress more rapidly and to a deeper level by looking behind the behavior and concentrating on perception. ...If our purpose is to release the creative potential of people and to open them to their experience, thereby increasing their opportunity for imaginative and innovative behavior, we must consider seriously the need for further thought and research from a perceptual point of view.[32]

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[31] John H. Fischer, "Our Schools: Battleground of Conflicting Interests," Saturday Review, Vol. 47, No. 12, March 21, 1964, p. 81.

[32] Robert E. Bills, "The Concepts of Perception and Behavior in Research," In Jack A. Culbertson and Stephen P. Hendley (eds.), Educational Research: New Perspectives (Danville, Illinois: The Interstate Printers and Publishers, Inc., 1963), pp. 114-119.

What seems basic to "thought and research from a perceptual point of view" is the recognition of the importance of the manner in which the individual views his alternatives--constructs them, in great part--for the eventual behavioral outcomes. He can be flexible and able to entertain and interrelate many alternatives at once, or he can be rigid and limited to a few alternatives. It has been argued that an important educational goal is the development of individuals who possess complex construal systems, i.e., able to entertain many alternatives at once.[33] Some writers voice this type of expectation of laboratory training and related organizational change activities. Bennis, for instance, suggests three major criteria of "organizational health:" adaptability, sense of identity, and capacity to test reality.[34] These closely mirror formulations about "mental health" proposed by Jahoda.[35] Of particular importance is Bennis' criterion of adaptability:

> This characteristic coincides with problem-solving ability, which in turn depends upon the organization's flexibility.... Flexibility is the freedom to learn through experience, to change with changing internal and external circumstances. Another way of putting it, in terms of organizational functioning, is to say that it is "learning how to learn."[36]

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[33] O.J. Harvey, David E. Hunt and Harold M. Schroder, Conceptual Systems and Personality Organization (New York: John Wiley and Sons, Inc, 1961), especially pp. 326-346.

[34] Bennis, op. cit., pp. 52-55.

[35] Marie Jahoda, Current Concepts of Positive Mental Health (New York: Basic Books, 1958).

[36] Bennis, op. cit., p. 52.

The dimension of flexibility seems to be an important precursor to individual and organizational renewal and effectiveness, pianned change, innovation and creativity. Lippitt, Watson and Westley discuss this aspect:

> There is one aspect of problem solving which is sometimes singled out for special attention and which is of particular interest to students of change. This is the characteristic of flexibility, or as it has sometimes been called, changeability. Some change agents consider this the key to the entire problem-solving process. They believe that a system can be made sufficiently flexible first to recognize the changes indicated by the incoming information about itself or its environment and then to create new and effective patterns in response to meet these changes, the system will be successful.[37]

Flexibility as used by the above writers implies a condition or state of affairs which is descriptive of construal systems of individuals, not of actual behaviors. Ways of thinking, of reconstructing experience, of electing appropriate alternatives are implied. How to measure "flexibility" is a difficult problem. A recent methodolological advance has been the development of a paper and pencil measure of flexibility by Felker and Smith[38] as an outgrowth of a pivotal investigation by Smith[39] of philosophic-mindedness. According to Smith, philosophic-mindedness is indicated when a person's construal propensities are characterized by:

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[37]Ronald Lippitt, Jeanne Watson and Bruce Westley, The Dynamics of Planned Change (New York: Harcourt, Brace and World, Inc., 1958), p. 63.

[38]Donald W. Felker and Philip G. Smith, The Measurement of Philosophic-Mindedness on the Criterion of Flexibility (Indiana: School of Education, Indiana University, 1966). Vol. 42, No. 1, Jan., 1966, pp. 138.

[39]Philip G. Smith, Philosophic-Mindedness in Educational Administration, (Ohio: College of Education, Ohio State University, 1956).

Comprehensiveness:

1. Viewing particulars in relation to a large field.
2. Relating immediate problems to long-range goals,
3. Utilizing the power of generalization.
4. Maintaining tolerance for theoretical considerations.

Penetration:

1. Questioning what is taken for granted or is self-evident,
2. Seeking for and formulating fundamentals,
3. Utilizing a sensitivity for implication and relevance,
4. Basing expectation on an abductive-deductive process.

Flexibility:

1. Being free from psychological rigidity
2. Evaluating ideas apart from their source
3. Seeing issues as many sided
4. Maintaining a tolerance for tentativeness and suspended judgment.[40]

Using an open-ended sentence completion test, Smith found that those principals who obtained high philosophic-mindedness scores differed in significant ways from those who obtained low scores. Of particular interest are findings with regard to the relationship between philosophic-mindedness in the principal and the school's atmosphere:

> . . . it appears that when the principal of a school exhibits comprehensiveness, penetration, and flexibility of thinking in dealing with the problems which confront him, the teachers, on the average, tend to feel that it is relatively easy to communicate with the principal. On the other hand, when the principal is low in these qualities of PM, many teachers report that communication is difficult, and a significant number of them express serious fears concerning the possibility that unprofessional or unethical reprisals will result if they make a candid statement of their opinions and feelings. Certainly the problem of communication is crucial enough to warrant further study. It may be that an indirect approach, through the development of PM, will result in the removal of certain blocks to communication that do not yield to more direct techniques applied in a non-PM atmosphere.

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[40]Ibid., pp. 30-31.

> ... There seems to be a direct relation between the PM of the principal and the general morale of the teaching staff. This relation extends to teachers' reaction to such specific matters as the way in which they are organized for curriculum study and the method by which study problems are selected. Moreover, it cuts across various forms of organization and group procedures, and therefore suggests that PM is more fundamental than forms and procedures. Further study in this area may prove of the highest importance in preparing administrators for successful staff leadership, and it should be undertaken before we accede to the proposals now being urged by some persons concerning the "correct" forms and procedures of so-called democratic leadership or democratic group process.
>
> ... even in the area of providing supplies and information concerning the work of teachers, the principal high in PM was perceived as functioning more satisfactorily than the principal low in PM.[41]

In summary, principals did differ with respect to the degree of philosophic-mindedness and this was related to the interaction in their schools. These findings provide support for John Fischer's observation which begins this section.

Felker and Smith selected flexibility as the dimension of philosophic-mindedness (hereafter referred to as PM) for beginning the development of a measuring instrument. They support this choice and suggest the possible overlap of the three original dimensions of PM as follows:

> It is possible that the three dimensions of PM (i.e, comprehensiveness, penetration, and flexibility), are really three different ways of looking at and naming the same thing. Said differently, it seems unlikely that a person could be highly comprehensive in his thinking while

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[41] Ibid., p. 79.

at the same time being nonpenetrating and inflexible. And it seems unlikely that a person who is flexible could long remain noncomprehensive and nonpenetrating. On the other hand, when we consider the characteristics within each dimension we can readily see that these do name more discreet tendencies. For example, a skilled logician might consistantly avoid the genetic fallacy (i.e., he would evaluate ideas apart from their source) and yet not develop a tolerance for tentativeness and suspended judgment. Or again, a person who generally sees issues as many-sided might still commit the genetic fallacy when evaluating the various positions on any given item.

It appears that an instrument to measure any one of the three dimensions could turn out to be an adequate measure of PM, while an instrument designed to measure PM as a whole would need to measure adequately each of the characteristics listed under each of the dimensions. As a first step in constructing a measure of PM the building of an instrument to measure each of the characteristics along some one of the three dimensions was called for. Flexibility was selected because (1) the characteristics of flexibility appeared (at least initially) to be more easily reducible to behavior measurable by a paper-and-pencil test, and (2) the dimension of flexibility presented an interesting combination of logical abilities and psycho-dispositions. A measure of these characteristics seemed most likely to be easily relatable to other educational research.[42]

PM consists of characteristics which are modifiable by learning. It involves skills that can be learned, for example, the awareness of certain logical fallacies. It involves dispositions and tendencies to approach problems in a particular manner, such as the ability to suspend judgment when appropriate. Each of these characteristics is individually modifiable by learning. The concept of PM as a human characteristic or cluster of traits grew from the assumption that these traits represented desirable outcomes from courses in philosophy

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[42] Ibid., p. 3.

of education.[43] In particular reference to school administration, Smith said:

> If we desire school administrators to develop comprehensiveness, penetration, and flexibility of thinking as they deal with educational problems, our preparation programs must provide opportunities for practice under guidance. One develops insight by striving to be insightful, and the relatively systematic and carefully formulated set of philosophic insights which give structure to the activity will gradually emerge as the individual seeks to develop the twelve marks of philosophic-mindedness.[44]

The concept of PM developed from an analysis of the goals of courses in philosopy of education; but an examination of the literature suggests the equal applicability to the goals of human relations training. A closer look at the four aspects of flexibility will show the relevance of PM (flexibility) as a dimension along which change would be expected to be produced by human relations training. Once again, these four aspects are: (1) being free from psychological rigidity, (2) evaluating ideas apart from their source, (3) seeing issues as many-sided rather than two-sided, and (4) maintaining tolerance for tentativeness and suspended judgment.

Two characteristics of flexibility deal primarily with logical fallacies and two deal primarily with dispositional characteristics or personality variables. The ability to recognize and avoid a logical fallacy is an intellectual skill. And yet, this ability also contains psychological or dispositional aspects. In a similar vein, human relations practitioners acknowledge both cognitive and affective aspects of

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[43] Ibid., p. 15.
[44] Smith, op. cit., p. 94

all learning.[45]

If a test required only the determination of when the genetic fallacy had been committed, it would test intellectual skill primarily. But in situations which call for making judgments without committing the genetic fallacy, more than intellectual ability is required. As Smith put it:

> The genetic fallacy has long been recognized as a potent source of error, where there remains a number of considerations related to it which have not always been fully understood. In the first place, there are at least four factors which influence the creation of ideas by the human mind: the personal background, the social-psychological conditions, the conceptual "neighbourhood" or "cluster" of ideas and the logical or philosophic system (by which an idea is implied).[46]

Operating in such a manner that the genetic fallacy is not one of the usual mistakes in thinking not only requires intellectual skill but also a disposition toward open-mindedness, a goal frequently mentioned in human relations literature. Maintaining tolerance for tentativeness and suspended judgment is also a characteristic of flexibility. This is not normally thought to be an intellectual skill. Many measures of intellectual ability by their very nature require almost immediate judgment and do not give opportunity for maintaining suspended judgment or an honest, "I don't know" or, "I don't have enough information to decide at this point." On most intellectual ability tests, the "I don't know", is an indication of an inability to handle the particular problem,

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[45]For a brilliant exploration of this theme, see C.M. Hampden-Turner, "An Existential 'Learning Theory' and the Integration of T-Group Research," Journal of Applied Behavioral Science, Vol. 2, No. r, October-November-December, 1966, pp. 367-386.

[46]Smith, op. cit., p. 46.

and consequently results in a lower score. Smith dealt with this issue as well as the related aspect of 'psychological rigidity" in the following terms:

> All of us frequently "know too much" about how to deal with certain types of situation -- our long experience tends to develop in us a kind of psychological rigidity. Sometimes we make rather inflexible evaluations of ideas, not on the basis of a careful consideration of their merit, but in terms of judgments concerning their source. The philosophic-minded individual avoids such inflexible behavior. He knows that experience cannot be measured in years. Experience is a matter of constructive and reconstructive growth of one's knowledge, beliefs and attitudes.
>
> By understanding the difference between contraries and full contradictions, the philosophic-minded are able to view issues as many-sided rather than as two-sided. They consider a number of alternatives and are willing to take action on the bases of the best supported hypotheses. They have learned "how to live without certainty, and yet without hesitation."[47]

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[47] Ibid., p. 52.

SUMMARY

The goal of self renewal, either in individuals, organizations or both, seems common to all practitioners of labratory training. Expectations for outcome from laboratory training usually includes increased flexibility and higher concern for both people and production. The Managerial Values instrument has not been used in "non-grid" laboratories strictly as a research instrument although the objectives of grid seminars and human relation laboratories seem to be similar.

Flexibility, as a construal variable, was explored in the context of the goals of laboratory training and organizational change activities. Special attention was given to the measurement of flexibility. The flexibility scale which was used in the present study has not been used before to assess the effects of laboratory training. And since the laboratory which was evaluated in the present study placed more emphases on self-knowledge goals, increase in flexibility among the participants seemed an appropriate criterion of assessment.

It is clear from the literature that most research on laboratory training is relatively atheoretical in that predictions are not made in advance, criteria are not specified, and base line data are not employed. The present study attempts to avoid these problems. Relevant criteria have been delineated and discussed in this section. Base line data will be outlined in the next section. This summary leads to the hypotheses:

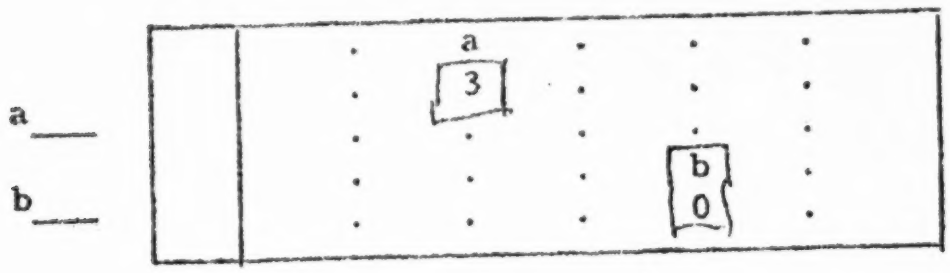
H:1 9/9 attitudes toward supervision will be increased by laboratory training.

H:2 Flexibility as measured by the PM Flexibility Scale will be increased by laboratory attendance.

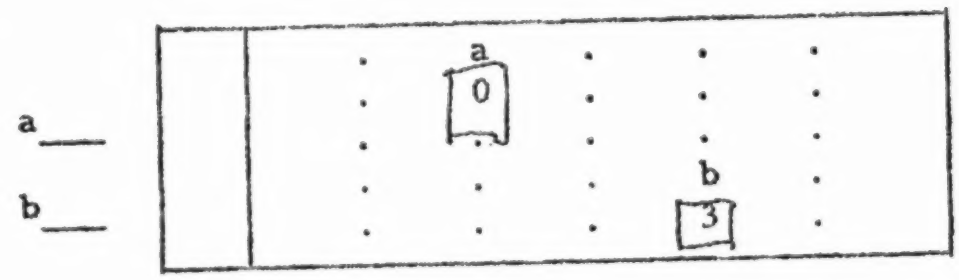
Instrumentation

Managerial Values. Attitudes toward supervision in this study were measured by means of a forced-choice questionnaire developed by Blake, Mouton, et al., entitled "A Comparison Study of Managerial Values."[48] Each of forty items presents a problem situation of supervision. The two alternatives to each item describe different managerial attitudes toward the use of people in a production setting. To obtain these alternatives, each of the five Managerial Grid styles (9/9; 5/5; 9/1; 1/9; and 1/1) is paired with every other Grid style four times. Respondents are instructed to allot a total of three points over the two choices according to the following key:

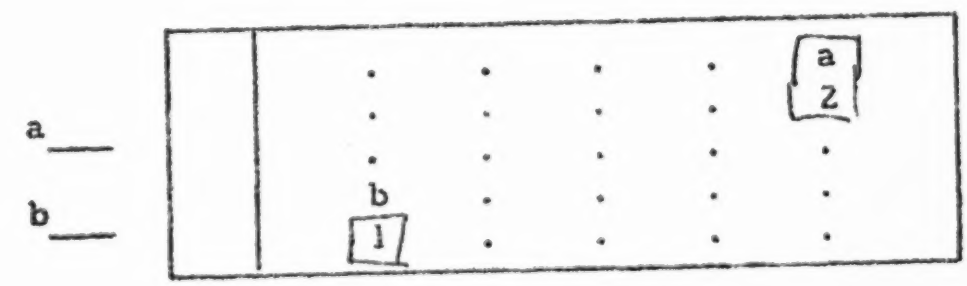
1. If you strongly endorse the (a) alternative over the (b) alternative, write 3 in the top box and 0 in the lower box:



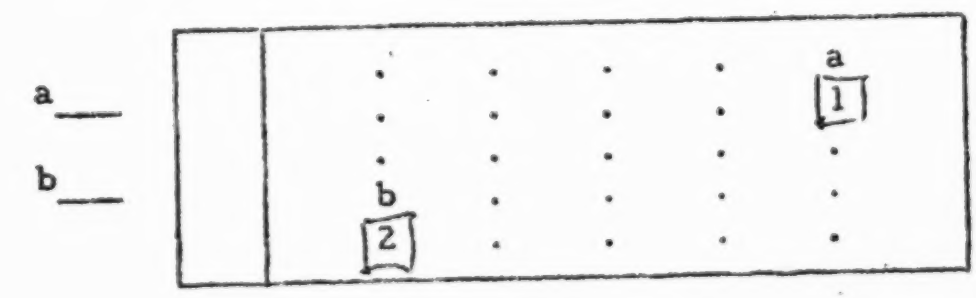
2. If you strongly endorse (b) over (a), write



3. If you endorse (a) slightly more than (b), write



4. If you endorse (b) slightly more than (a), write



By this scheme, each style is an alternative sixteen times; the range of possible scores is 0 to 48. Blake and Mouton report a test-retest reliability of .86 on the Managerial Values instrument with no correlation between subscores which yield the various styles higher than -.10[49]

PM Flexibility Scale. This scale is an enlargement of Smith's definition of philosophic-mindedness.[50] In his explication of the construct a person was considered philosophic-minded if his thinking was characterized by three dimensions, i.e., comprehensiveness, penetration, and flexibility.[51] The PM Flexibility Scale was constructed using one of the three dimensions, flexibility, as the criterion attribute. In constructing the scale, fourteen categories of behavior which would be indicative of the four characteristics of flexible thinking were outlined. These were:

I. FREEDOM AND PSYCHOLOGICAL RIGIDITY

1. Ability and inclination to give attention to ideas that are contrary to common sense.
2. Ability and inclination to pay attention to novel ideas.
3. Ability and inclination to try new solutions to new problems.
4. Ability to operate effectively when under stress.

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[49]Robert R. Blake and Jane S. Mouton, "Some Effects of Managerial Grid Seminar Training on Union and Management Attitudes Toward Supervision," Journal of Applied Behavioral Science, Vol. 2, No. 4, October-November-December, 1966, p. 301.

[50]Smith, op. cit.

[51]Ibid., pp. 44-51.

II. ABILITY TO EVALUATE IDEAS APART FROM THE SOURCE

5. Ability and inclination to study ideas proposed by those whose "philosophy of life" is believed to be wrong or inadequate.

6. Ability and inclination to reject a person's group affiliations as a basis for judging his ideas.

7. Ability and inclination to separate ideas from emotionally loaded words.

8. Ability and inclination to question authorities when there is a good reason, but to accept authorities when there is no good reason to doubt them.

III. SEES ISSUES AS MANY-SIDED RATHER THAN TWO-SIDED, AND THE DEVELOPMENT OF RELATIVELY LARGE NUMBERS OF ALTERNATE HYPOTHESES, EXPLANATIONS, VIEWPOINTS, ETC.

9. Ability and inclination to reject "black or white" thinking.

10. Ability and inclination to seek compromise actions when disputes arise.

11. Ability and inclination to look at problematic situations from various viewpoints and perspectives.

IV. MAINTAINING A TOLERANCE FOR TENTATIVENESS AND SUSPENDED JUDGEMENT AND A WILLINGNESS TO TAKE ACTION IN AN AMBIGUOUS SITUATION.

12. Ability and inclination to refrain from over-definiteness when the situation is in fact ambiguous.

13. Ability and inclination to refrain from over-caution when a decision is called for by the situation.

14. Ability and inclination to project and take action on the basis of tentative rather than fixed plans.[52]

The scale was then constructed with six forced-choice items to measure each of the fourteen behaviors. These items were analyzed and revised a number of times. Of the eighty-four final items, seventy-eight

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[52]Felker and Smith, op. cit., pp. 25-26.

were significantly correlated with the criterion scores. The other six items were correlated but did not reach statistical significance. The scale has a test-retest reliability coeficcient of .80 with three months between administrations. The split-half reliability coefficient, using the Spearman Brown correction formula, is also .80. The four subscores (one for each of the four characteristics of flexibility) have inter-correlated from .255 to .414.[53] In several construct validation attempts, the PM flexibility scale was found to be positively correlated with ratings of students on flexibility by instructors in philosophy of education courses, negatively correlated with dogmatism, sensitive to elevation by a philosophy of education course designed to increase flexibility, and positively correlated with grades in philosophy of education course.[54]

In summary, both the PM flexibility scale and the Managerial Values scale seem to be reliable and their subscales are fairly independent.

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[53] Ibid., p. 73.

[54] Donald W. Felker, "A Measuring Instrument for Philosophers of Education." A paper delivered at the Philosophy of Education Society, St. Louis, April 4, 1966, p. 8. Also: Donald W. Felker, "Further Validation of a Scale to Measure Philosophic-Mindedness" Educational and Psychological Measurement, 1966, 26, 1007-1013.

Procedures

Ninety-eight members of the Oregon Compact constituted the experimental and control groups for this study.[55] When plans were made for a human relations laboratory sponsored by the Compact and the National Training Laboratories, announcements were sent to all members and registrations were requested. Thus the experimental group (the laboratory participants) were self-selected. Random assignment to experimental and control groups was not possible. This means that in the strict sense, no control group of "selectees" was available. This forces the study into a quasi-experimental design.[56] Or to use the terminology of Kerlinger,[57] the study is ex-post-facto rather than a true experiment. This is the case since the investigator lacked the power to assign subjects to experimental and control groups and variance control by means of randomization was not possible.

The total membership of the Oregon Compact (140) was asked to fill out the two research instruments during a period bounded by two and one-half weeks before the laboratory up until the general session which began the laboratory. Forty-nine non-attending members of the Oregon Compact completed the pre-measures. These individuals constituted the quasi-control group.

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[56] In establishing this distinction from a true experimental design, the chapter by Donald T. Campbell and Julian C. Stanley, "Experimental and Quasi-Experimental Designs for Research on Teaching," is acknowledged. In N. L. Gage (ed.), Handbook of Research on Teaching (Chicago: Rand McNally and Co., 1963), pp. 412-431.

[57] Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1966), p. 301.

[55] I am deeply indebted to the Director of the Oregon Compact, Mr. Ray Talbert, for his cooperation in supporting this research and encouraging members of the Compact to participate and, consequently, to give some of their very valuable time and energies to this project

Scores obtained on each instrument at each time permitted a comparative statistical analysis to be made to test the hypotheses of the study. The design used is charted as follows:

Research Design

	Pre-lab (t_1)	End of lab (t_2)	Post-lab (t_3)
Experimental Group	PM[1] (49)[2]	PM (49)	PM (45)
	MV[3] (49)	MV (49)	MV (45)
Control Group	PM (49)	---	PM (37)
	MV (49)	---	MV (36)

[1]PM Flexibility Scale

[2]Refers to number of scores

[3]Managerial Values Scale

Practical concerns precluded the collection of data from control members at t_2. This time was the last day of the laboratory when the experimental members were available in one place.

The hypotheses predict change in the measurements as an effect of the laboratory training. The change is expected in the direction of higher scores on the PM total score and the 9/9 style of the Managerial Values scale.

Further safeguards to contamination of results

Any research on impacts of any type outside the well-controlled experimental laboratory must have its spotty places. In this particular attempt, several steps were taken to avoid some of these pitfalls.

For example, the training staff was not informed of the research hypotheses, instrumentation or design. A detached person[58] collected all research data. Participants were not informed that there would be a second, or third administration of the instruments. The instruments were not discussed at the laboratory. Despite all this secrecy, a good percentage of the members who filled out the first data round stayed with the other collections to make the returns fairly complete.

TABLE 1

Experimental Group Findings

Variable	Means			F	LSD		
	t_1	t_2	t_3		$t_2 - t_1$	$t_3 - t_1$	$t_3 - t_2$
FTS	57.245	61.898	66.733	4.776**	4.653**	3.488**	1.165
FPR	16.714	18.327	17.689	3.803*	1.613**	.975	.638
EIA	18.265	19.224	18.867	1.814	.959	.602	.357
ENA	9.531	10.775	10.467	2.366	1.224	.936	.288
TOL	12.735	13.633	13.489	2.025	.896	.754	.144
9/9	31.592	34.000	34.2	5.219**	2.408**	2.608**	.2
9/1	20.408	16.612	18.244	8.644**	3.796**	2.164	1.632
5/5	32.980	31.939	31.778	1.781	1.041	1.202	.161
1/9	75.714	27.837	26.889	3.210*	2.123	1.175	.948
1/1	9.306	9.612	8.889	1	.306	.417	.723

* Significant at .05 level
** Significant at .01 level

[58] I acknowledge the untiring efforts and enthusiasm of my colleague at the University of Oregon, Mr. Ronald R. Bringle, who assisted with all phases of this study, as well as adding impetus to other areas of intellectual pursuit on my part.

TABLE 2

Quasi-Control Group Findings:

Variable	t_1	Means	t_3	F
FTS	57.163		57.649	<1
FPR	16,388		16.622	<1
EIA	17.939		18.270	<1
ENA	9.571		8.676	<1
TOL	13.265		13.082	<1
9/9	33.122		33.778	<1
9/1	19.939		20.139	<1
5/5	32.816		33.861	1.667
1/9	25.878		24.500	2.448
1/1	8.404		7.722	<1

*Significant at .05
**Significant at .01

Testing the Hypotheses

Supervisory Attitudes. H_1 was stated as follows: 9/9 supervisory attitudes will be increased by human relations laboratory training. Pursuant to testing this hypothesis, the scores of the laboratory participants obtained at the three administrations of the Managerial Values instrument were subjected to analysis of variance. The F-test was significant at the .01 level, and it can be assumed that the group means are not from a common population. In concrete application to this study: the groups of scores on the Managerial Values instrument obtained by the experimental group at three different administrations are different. Change over time has

occurred. The F-test, however, gives no clue as to how many differences there are or to where they are. Following a suggestion by Snedecor[59] the Least Significant Difference (LSD) test which is derived from analysis of variance was applied to all parts of experimental group means on the Managerial Values instrument.

Both post measures (t_2 and t_3) show differences in means when compared with the pre-laboratory measurements of 9/9 attitudes which are significant at the .01 level of confidence. It can be concluded that 9/9 attitudes about supervisory practices increased among members of the group who participated in human relations laboratory training. But this change cannot yet be attributed to the effects of the laboratory; other persons may have changed also. In order to ascertain whether this was the case the quasi-control group changes over time were examined. No significant change occurred in the quasi-control group scores over time (see Table 2). Therefore, it can be concluded: laboratory training, even though in this case no use of direct teaching to the Managerial Values instrument occurred, produced changes in the direction desired and achieved in Managerial Grid Seminars and these changes were in the direction predicted in H_1.

PM Flexibility. H_2 was stated as follows: PM Flexibility will be increased by human relations laboratory training. Analysis of variance of scores obtained on the three administrations of the PM Flexibility Scale is reported in Table I (see FTS scores).

The F-test was significant at the .01 level, and it can be assumed that the means are not from a common population. In terms of this study,

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[59]George W. Snedecor, Statistical Methods: Applied to Experiments in Agriculture and Biology (Ames, Iowa: The Iowa State University Press, 1964), p. 251.

the conclusion is: PM Flexibility scores at the three administrations are different. Change over time has occurred. Again employing the Least Significant Differences (LSD) test derived from analysis of variance, the following results were obtained.

Both post measures (t_2 and t_3) show differences in means when compared with the pre-laboratory measurements of PM Flexibility which are significant at the .01 level of confidence. The conclusion would seem to be warranted that PM Flexibility increased among those individuals who participated in human relations laboratory training. Did the control group change over time also? (See Table 2).

An "F" of less than 1 indicated that the group means were not different. No change has occurred in the control group from time one to time three. And recalling from Table 1 that the experimental and control group had changed from time one to time two as well as from time one to time three, we may conclude that H_2 is supported. PM Flexibility has been increased by laboratory training.

Secondary Findings

No hypotheses were advanced in this study concerning the PM Flexibility subscales (Variables 2, 3, 4, 5) or about the Managerial Styles of 9/1, 5/5, 1/9, and 1/1 (Variables 7, 8, 9, 10). However, results relevant to these variables are presented. On one PM subscale entitled Freedom from Psychological Rigidity, a change occurred after the laboratory but did not last for the time 3 post-test.

The salient shifts to be noted on the managerial values instrument are the marked reduction of 9/1 attitudes at the conclusion of the laboratory (.01 level of significance) coupled with an upward swing after six weeks (still significantly different at the .05 level from t_1).

A complementary shift toward higher 1/9 attitudes immediately after the lab (.05 level) appears. Neither of these trends appeared in the control group. And they have not occurred in grid seminars.

Summary and Implications

This research, like most research, probably raises more questions than it answers. Empirical support was found for the hypotheses that flexibility and people-production concerns increased as a result of laboratory training for participating school administrators of the Oregon Compact. These increases lasted for six weeks weeks after the laboratory analyses of the sub-scales in the PM flexibility and the Managerial Values instrument showed so few temporary increases, but none which lasted for the six weeks post-test.

Some questions for further research come to mind. First, what is the staying power of this particular laboratory? Will these effects last for a six months post-test?

Another question is: would a longer laboratory have a stronger effect? Laboratories differ in length, the most typical being two weeks. The three-day laboratory is a rather short impact in the total life-span of each participant.

The fluctuation of the 9/1 and 1/9 managerial values scores has not been found by Blake and Mouton from grid seminars while the increase in 9/9 scores has been found. Could it be that the grid seminars "teach" more away from the 9/1 and 1/9 rather than toward higher 9/9 scores.

Another sticky question is the one of treatment-specific effects. What particular experience(s) in the laboratory caused the increases which were found?

The PM flexibility instrument has not been used previously in studies of human relation laboratory training. And yet, increased in openness and flexibility were fairly well agreed upon criteria for laboratory training effectiveness. The instrument itself is reliable and well-developed. It would seem to be a useful addition to further evaluations of laboratory training.

An obvious implication is the necessity for collaboration between professor and practitioner in educational administration. Considerable opaqueness had to be employed so as to conduct what otherwise was a straightforward evaluation study. Neither the design, hypotheses, instruments, nor the fact that a second and a third administration would occur, were discussed with the practitioners, the "subjects" if you will. And yet a strong enough bond of trust was established so that the research could be conducted. Cooperation was very good.

Lastly, but certainly not least, the question must be raised: is more flexibility desirable among school administrators? Are higher people-production supervisory attitudes, an objective of grid seminars in the business field, desireable among school administrators. This study proceeded with a nominative "yes" to these questions. As Gardner, whose work on self-renewing systems set the problem of this study in context, has said:

> "When we talk about revitalizing a society, we tend to put exclusive emphasis on finding new ideas. But there is usually no shortage of new ideas; the problem is to get a hearing for them. And that means breaking through the crusty rigidity and stubborn complacency of the status quo. The aging society develops elaborate defenses against new ideas --"mind-forged manacles," in William Blake's vivid phrase."[60]

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[60]John W. Gardner, "The Ever-Renewing Society, "Saturday Review, January 5, 1963.